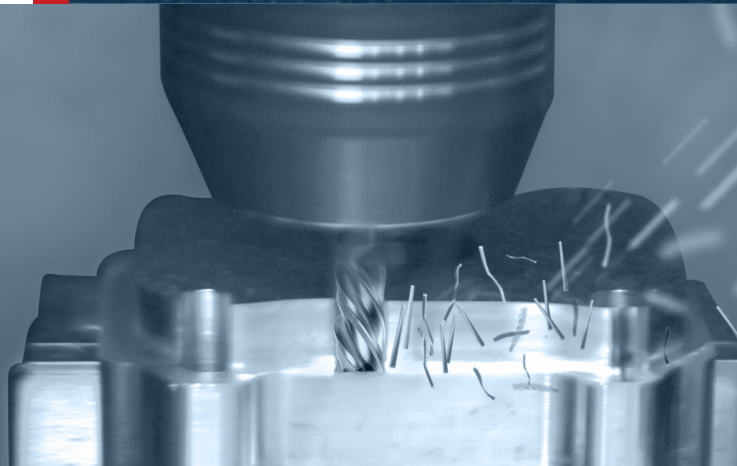




END MILLS





The Patriot High Performance® solid carbide end mill project is a long-anticipated labor of love for ARCH® Cutting Tools.

KEO® is a brand that you've known and trusted for more than 80 years and is universally recognized within the industrial manufacturing and metalworking space. Long established as a reliable source of quality products, KEO also is synonymous with great customer service and engineering expertise. Now, thanks to that engineering expertise, there's a new high-performance option to meet the demands of today's production-based machining environment.

Responding to the fact that jobs are getting tougher and that materials are increasingly more challenging to machine, the Patriot High Performance solid carbide end mill – through years of development – now has been successfully applied in a multitude of modern practical applications.

These consistently superior results have elevated KEO to a new, industry-leading level. KEO has always been your 'workhorse,' now it's the brand with a rapidly growing portfolio of high-performance tools designed for a wide variety of today's demanding environments.

How good is this growing portfolio?

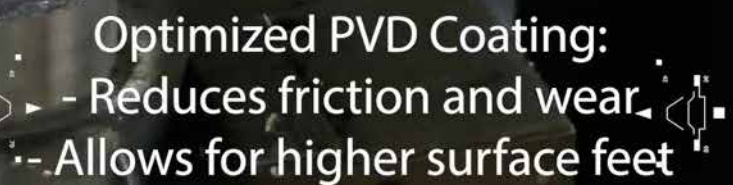
I can make a case that it's among the 'best-in-class' high-performance end mills. And – this elevated performance is still available at a distinct cost advantage through its accelerated material removal rates, extended tool life and exceptional part finish. Without hesitation, I rank this portfolio with any competitive milling tool in today's market.

I look forward to you experiencing these advantages yourself. Stronger, longer-lasting, higher-performance, versatile, and – as always – American made. Patriot High Performance end mills establish a new industry standard.

*Dino Fracassi,
ARCH® Cutting Tools National Sales Director*



Originally optimized to tackle difficult to machine applications such as in Titanium & pre-hardened steels, this High-Performance End Mill has excelled in a wide array of exotic, alloyed and ferrous part materials. The Patriot family of high-performance end mills is designed with advanced proprietary geometry. There is a thin film coating that consistently delivers increased tool life, superior part finish and aggressive metal removal rates. This is all accomplished within a machining environment that generates extreme working temperatures.



- Ranging from 0.125" - 1.00" diameters
- Can be used in roughing, profiling, slotting, and finishing applications
- Increased tool life — high performance coating that offers high wear resistance complimented by toughness and stability at high temperatures
- Significantly reduces chatter and improve surface finish
- Increase material removal rates by increased cutting depth and feed rates

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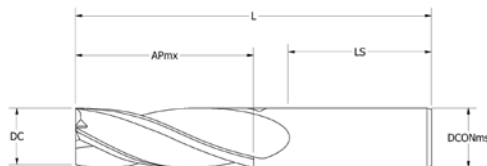
VARIABLE HELIX



4-FLUTE - STUB LENGTH - SQUARE END



DC	DCONms	APmx	LS	L	PRODUCT #
0.1250	0.1250	0.2500	0.8750	1.5000	976-000-001
0.1875	0.1875	0.3750	1.2500	2.0000	976-000-002
0.2500	0.2500	0.5000	1.1250	2.0000	976-000-003
0.3125	0.3125	0.5000	1.1250	2.0000	976-000-004
0.3750	0.3750	0.6250	1.0000	2.0000	976-000-005
0.4375	0.4375	0.6250	1.5000	2.5000	976-000-006
0.5000	0.5000	0.7500	1.3750	2.5000	976-000-007
0.6250	0.6250	0.7500	1.8750	3.0000	976-000-008
0.7500	0.7500	1.0000	1.6250	3.0000	976-000-009



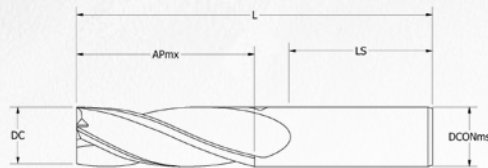
4-FLUTE - STANDARD LENGTH - SQUARE END



DC	DCONms	APmx	LS	L	PRODUCT #
0.1250	0.1250	0.5000	0.6250	1.5000	976-000-010
0.1875	0.1875	0.6250	1.0000	2.0000	976-000-011
0.2500	0.2500	0.7500	1.3750	2.5000	976-000-012
0.2500	0.2500	1.0000	1.1250	2.5000	976-000-013
0.2500	0.2500	1.2500	0.8750	2.5000	976-000-014
0.3125	0.3125	0.8125	1.3125	2.5000	976-000-015
0.3750	0.3750	0.8750	1.2500	2.5000	976-000-016
0.3750	0.3750	1.0000	1.1250	2.5000	976-000-017
0.3750	0.3750	1.2500	0.8750	2.5000	976-000-018
0.4375	0.4375	1.0000	1.3750	2.7500	976-000-019
0.5000	0.5000	1.0000	1.6250	3.0000	976-000-020
0.5000	0.5000	1.2500	1.3750	3.0000	976-000-021
0.5000	0.5000	1.5000	1.1250	3.0000	976-000-022
0.5000	0.5000	1.5000	1.6250	3.5000	976-000-023
0.5000	0.5000	1.7500	1.3750	3.5000	976-000-024
0.6250	0.6250	1.5000	1.6250	3.5000	976-000-025
0.6250	0.6250	1.7500	1.3750	3.5000	976-000-026
0.7500	0.7500	1.7500	1.8750	4.0000	976-000-027
1.0000	1.0000	1.7500	1.8750	4.0000	976-000-028



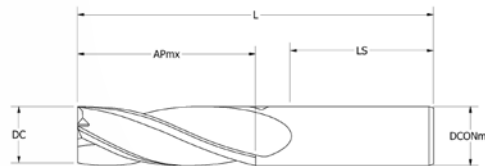
VARIABLE HELIX



4-FLUTE - LONG LENGTH - SQUARE END



DC	DCONms	APmax	LS	L	PRODUCT #
0.1250	0.1250	0.7500	1.3750	2.5000	976-000-029
0.1875	0.1875	0.7500	1.3750	2.5000	976-000-030
0.2500	0.2500	1.1250	1.5000	3.0000	976-000-031
0.3125	0.3125	1.1250	1.5000	3.0000	976-000-032
0.3750	0.3750	1.2500	1.3750	3.0000	976-000-033
0.4375	0.4375	2.0000	1.6250	4.0000	976-000-034
0.5000	0.5000	2.0000	1.6250	4.0000	976-000-035
0.6250	0.6250	2.2500	2.3750	5.0000	976-000-036
0.7500	0.7500	2.2500	2.3750	5.0000	976-000-037
1.0000	1.0000	2.2500	2.3750	5.0000	976-000-038



4-FLUTE - X LONG LENGTH - SQUARE END



DC	DCONms	APmax	LS	L	PRODUCT #
0.1250	0.1250	1.0000	1.6250	3.0000	976-000-039
0.1875	0.1875	1.1250	1.5000	3.0000	976-000-040
0.2500	0.2500	1.5000	2.1250	4.0000	976-000-041
0.3125	0.3125	1.6250	2.0000	4.0000	976-000-042
0.3750	0.3750	2.0000	1.6250	4.0000	976-000-043
0.4375	0.4375	3.0000	2.6250	6.0000	976-000-044
0.5000	0.5000	3.0000	2.6250	6.0000	976-000-045
0.6250	0.6250	3.0000	2.6250	6.0000	976-000-046
0.7500	0.7500	3.0000	2.6250	6.0000	976-000-047
1.0000	1.0000	3.0000	2.6250	6.0000	976-000-048

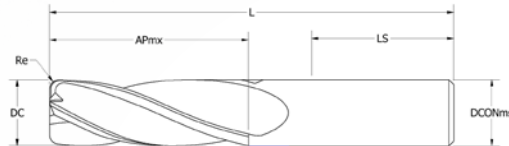
VARIABLE HELIX



4-FLUTE - STUB LENGTH - CORNER RADIUS



DC	DCONms	Re	APmx	LS	L	PRODUCT #
0.1250	0.1250	0.0100	0.2500	0.8750	1.5000	976-000-128
0.1875	0.1875	0.0100	0.3750	1.2500	2.0000	976-000-129
0.2500	0.2500	0.0200	0.5000	1.1250	2.0000	976-000-130
0.3125	0.3125	0.0200	0.5000	1.1250	2.0000	976-000-131
0.3750	0.3750	0.0200	0.6250	1.0000	2.0000	976-000-132
0.4375	0.4375	0.0300	0.6250	1.5000	2.5000	976-000-133
0.5000	0.5000	0.0300	0.7500	1.3750	2.5000	976-000-134
0.6250	0.6250	0.0400	0.7500	1.8750	3.0000	976-000-135
0.7500	0.7500	0.0400	1.0000	1.6250	3.0000	976-000-136



4-FLUTE - STANDARD LENGTH - CORNER RADIUS



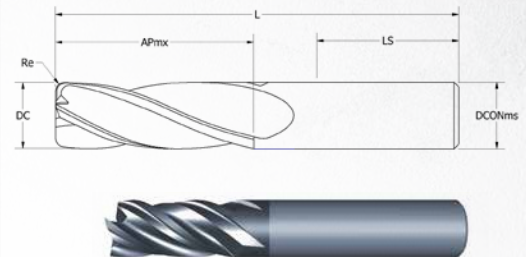
DC	DCONms	Re	APmx	LS	L	PRODUCT #
0.1250	0.1250	0.0100	0.5000	0.6250	1.5000	976-000-137
0.1250	0.1250	0.0150	0.5000	0.6250	1.5000	976-000-138
0.1250	0.1250	0.0200	0.5000	0.6250	1.5000	976-000-139
0.1875	0.1875	0.0100	0.6250	1.0000	2.0000	976-000-140
0.1875	0.1875	0.0150	0.6250	1.0000	2.0000	976-000-141
0.1875	0.1875	0.0200	0.6250	1.0000	2.0000	976-000-142
0.1875	0.1875	0.0300	0.6250	1.0000	2.0000	976-000-143
0.2500	0.2500	0.0100	0.7500	1.3750	2.5000	976-000-144
0.2500	0.2500	0.0150	0.7500	1.3750	2.5000	976-000-145
0.2500	0.2500	0.0200	0.7500	1.3750	2.5000	976-000-146
0.2500	0.2500	0.0300	0.7500	1.3750	2.5000	976-000-147
0.2500	0.2500	0.0600	0.7500	1.3750	2.5000	976-000-148
0.2500	0.2500	0.0100	1.0000	1.1250	2.5000	976-000-149
0.2500	0.2500	0.0150	1.0000	1.1250	2.5000	976-000-150
0.2500	0.2500	0.0200	1.0000	1.1250	2.5000	976-000-151
0.2500	0.2500	0.0300	1.0000	1.1250	2.5000	976-000-152
0.2500	0.2500	0.0600	1.0000	1.1250	2.5000	976-000-153
0.2500	0.2500	0.0100	1.2500	0.8750	2.5000	976-000-154
0.2500	0.2500	0.0150	1.2500	0.8750	2.5000	976-000-155
0.2500	0.2500	0.0200	1.2500	0.8750	2.5000	976-000-156
0.2500	0.2500	0.0300	1.2500	0.8750	2.5000	976-000-157
0.2500	0.2500	0.0600	1.2500	0.8750	2.5000	976-000-158
0.3125	0.3125	0.0100	0.8125	1.3125	2.5000	976-000-159
0.3125	0.3125	0.0150	0.8125	1.3125	2.5000	976-000-160
0.3125	0.3125	0.0200	0.8125	1.3125	2.5000	976-000-161



4-FLUTE - STANDARD LENGTH - CORNER RADIUS



DC	DCONms	Re	APmx	LS	L	PRODUCT #
0.3125	0.3125	0.0300	0.8125	1.3125	2.5000	976-000-162
0.3125	0.3125	0.0600	0.8125	1.3125	2.5000	976-000-163
0.3750	0.3750	0.0100	0.8750	1.2500	2.5000	976-000-164
0.3750	0.3750	0.0150	0.8750	1.2500	2.5000	976-000-165
0.3750	0.3750	0.0200	0.8750	1.2500	2.5000	976-000-166
0.3750	0.3750	0.0300	0.8750	1.2500	2.5000	976-000-167
0.3750	0.3750	0.0600	0.8750	1.2500	2.5000	976-000-168
0.3750	0.3750	0.0100	1.0000	1.1250	2.5000	976-000-169
0.3750	0.3750	0.0150	1.0000	1.1250	2.5000	976-000-170
0.3750	0.3750	0.0200	1.0000	1.1250	2.5000	976-000-171
0.3750	0.3750	0.0300	1.0000	1.1250	2.5000	976-000-172
0.3750	0.3750	0.0600	1.0000	1.1250	2.5000	976-000-173
0.3750	0.3750	0.0100	1.2500	0.8750	2.5000	976-000-174
0.3750	0.3750	0.0150	1.2500	0.8750	2.5000	976-000-175
0.3750	0.3750	0.0200	1.2500	0.8750	2.5000	976-000-176
0.3750	0.3750	0.0300	1.2500	0.8750	2.5000	976-000-177
0.3750	0.3750	0.0600	1.2500	0.8750	2.5000	976-000-178
0.4375	0.4375	0.0150	1.0000	1.3750	2.7500	976-000-179
0.4375	0.4375	0.0200	1.0000	1.3750	2.7500	976-000-180
0.4375	0.4375	0.0300	1.0000	1.3750	2.7500	976-000-181
0.4375	0.4375	0.0600	1.0000	1.3750	2.7500	976-000-182
0.5000	0.5000	0.0100	1.0000	1.6250	3.0000	976-000-183
0.5000	0.5000	0.0150	1.0000	1.6250	3.0000	976-000-184
0.5000	0.5000	0.0300	1.0000	1.6250	3.0000	976-000-185
0.5000	0.5000	0.0600	1.0000	1.6250	3.0000	976-000-186
0.5000	0.5000	0.0900	1.0000	1.6250	3.0000	976-000-187
0.5000	0.5000	0.1200	1.0000	1.6250	3.0000	976-000-188
0.5000	0.5000	0.0100	1.2500	1.3750	3.0000	976-000-189
0.5000	0.5000	0.0150	1.2500	1.3750	3.0000	976-000-190
0.5000	0.5000	0.0300	1.2500	1.3750	3.0000	976-000-191
0.5000	0.5000	0.0600	1.2500	1.3750	3.0000	976-000-192
0.5000	0.5000	0.0900	1.2500	1.3750	3.0000	976-000-193
0.5000	0.5000	0.1200	1.2500	1.3750	3.0000	976-000-194
0.5000	0.5000	0.0100	1.5000	1.1250	3.0000	976-000-195
0.5000	0.5000	0.0150	1.5000	1.1250	3.0000	976-000-196
0.5000	0.5000	0.0300	1.5000	1.1250	3.0000	976-000-197
0.5000	0.5000	0.0600	1.5000	1.1250	3.0000	976-000-198
0.5000	0.5000	0.0900	1.5000	1.1250	3.0000	976-000-199
0.5000	0.5000	0.1200	1.5000	1.1250	3.0000	976-000-200
0.5000	0.5000	0.0100	1.5000	1.6250	3.5000	976-000-201
0.5000	0.5000	0.0150	1.5000	1.6250	3.5000	976-000-202
0.5000	0.5000	0.0300	1.5000	1.6250	3.5000	976-000-203
0.5000	0.5000	0.0600	1.5000	1.6250	3.5000	976-000-204
0.5000	0.5000	0.0900	1.5000	1.6250	3.5000	976-000-205
0.5000	0.5000	0.1200	1.5000	1.6250	3.5000	976-000-206
0.5000	0.5000	0.0100	1.7500	1.3750	3.5000	976-000-207
0.5000	0.5000	0.0150	1.7500	1.3750	3.5000	976-000-208

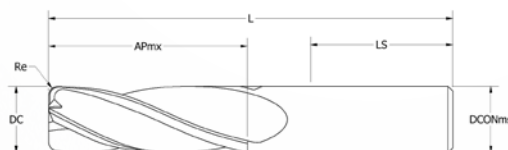




4-FLUTE - STANDARD LENGTH - CORNER RADIUS



DC	DCONms	Re	APmx	LS	L	PRODUCT #
0.5000	0.5000	0.0300	1.7500	1.3750	3.5000	976-000-209
0.5000	0.5000	0.0600	1.7500	1.3750	3.5000	976-000-210
0.5000	0.5000	0.0900	1.7500	1.3750	3.5000	976-000-211
0.5000	0.5000	0.1200	1.7500	1.3750	3.5000	976-000-212
0.6250	0.6250	0.0300	1.5000	1.6250	3.5000	976-000-213
0.6250	0.6250	0.0400	1.5000	1.6250	3.5000	976-000-214
0.6250	0.6250	0.0600	1.5000	1.6250	3.5000	976-000-215
0.6250	0.6250	0.0900	1.5000	1.6250	3.5000	976-000-216
0.6250	0.6250	0.1200	1.5000	1.6250	3.5000	976-000-217
0.6250	0.6250	0.0300	1.7500	1.3750	3.5000	976-000-218
0.6250	0.6250	0.0400	1.7500	1.3750	3.5000	976-000-219
0.6250	0.6250	0.0600	1.7500	1.3750	3.5000	976-000-220
0.6250	0.6250	0.0900	1.7500	1.3750	3.5000	976-000-221
0.6250	0.6250	0.1200	1.7500	1.3750	3.5000	976-000-222
0.7500	0.7500	0.0300	1.7500	1.8750	4.0000	976-000-223
0.7500	0.7500	0.0400	1.7500	1.8750	4.0000	976-000-224
0.7500	0.7500	0.0600	1.7500	1.8750	4.0000	976-000-225
0.7500	0.7500	0.0900	1.7500	1.8750	4.0000	976-000-226
0.7500	0.7500	0.1200	1.7500	1.8750	4.0000	976-000-227
1.0000	1.0000	0.0300	1.7500	1.8750	4.0000	976-000-228
1.0000	1.0000	0.0400	1.7500	1.8750	4.0000	976-000-229
1.0000	1.0000	0.0600	1.7500	1.8750	4.0000	976-000-230
1.0000	1.0000	0.0900	1.7500	1.8750	4.0000	976-000-231
1.0000	1.0000	0.1200	1.7500	1.8750	4.0000	976-000-232



4-FLUTE - STANDARD LENGTH - CORNER RADIUS

ROUGHING/CHIP BREAKER



DC	DCONms	Re	APmx	LS	L	PRODUCT #
0.2500	0.2500	0.0200	0.7500	1.3750	2.5000	976-000-529
0.3750	0.3750	0.0200	0.8750	1.2500	2.5000	976-000-530
0.5000	0.5000	0.0300	1.0000	1.6250	3.0000	976-000-531
0.6250	0.6250	0.0400	1.5000	1.6250	3.5000	976-000-532
0.7500	0.7500	0.0400	1.7500	1.8750	4.0000	976-000-533
1.0000	1.0000	0.0400	1.7500	1.8750	4.0000	976-000-534

PG. 26

**4-FLUTE - LONG LENGTH - CORNER RADIUS**

DC	DCONms	Re	APmx	LS	L	PRODUCT #
0.1250	0.1250	0.0150	0.7500	1.3750	2.5000	976-000-233
0.1250	0.1250	0.0300	0.7500	1.3750	2.5000	976-000-234
0.1875	0.1875	0.0150	0.7500	1.3750	2.5000	976-000-235
0.1875	0.1875	0.0300	0.7500	1.3750	2.5000	976-000-236
0.2500	0.2500	0.0150	1.1250	1.5000	3.0000	976-000-237
0.2500	0.2500	0.0300	1.1250	1.5000	3.0000	976-000-238
0.3125	0.3125	0.0150	1.1250	1.5000	3.0000	976-000-239
0.3125	0.3125	0.0300	1.1250	1.5000	3.0000	976-000-240
0.3750	0.3750	0.0300	1.2500	1.3750	3.0000	976-000-241
0.3750	0.3750	0.0600	1.2500	1.3750	3.0000	976-000-242
0.4375	0.4375	0.0300	2.0000	1.6250	4.0000	976-000-243
0.4375	0.4375	0.0600	2.0000	1.6250	4.0000	976-000-244
0.5000	0.5000	0.0300	2.0000	1.6250	4.0000	976-000-245
0.5000	0.5000	0.0600	2.0000	1.6250	4.0000	976-000-246
0.6250	0.6250	0.0300	2.2500	2.3750	5.0000	976-000-247
0.6250	0.6250	0.0600	2.2500	2.3750	5.0000	976-000-248
0.7500	0.7500	0.0300	2.2500	2.3750	5.0000	976-000-249
0.7500	0.7500	0.0600	2.2500	2.3750	5.0000	976-000-250
1.0000	1.0000	0.0300	2.2500	2.3750	5.0000	976-000-251
1.0000	1.0000	0.0600	2.2500	2.3750	5.0000	976-000-252



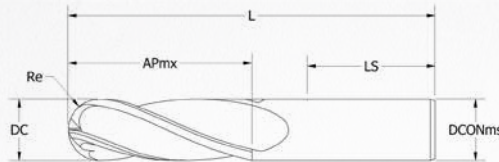
PG. 26

**4-FLUTE - X LONG LENGTH - CORNER RADIUS**

DC	DCONms	Re	APmx	LS	L	PRODUCT #
0.1250	0.1250	0.0150	1.0000	1.6250	3.0000	976-000-253
0.1250	0.1250	0.0300	1.0000	1.6250	3.0000	976-000-255
0.1875	0.1875	0.0150	1.1250	1.5000	3.0000	976-000-256
0.1875	0.1875	0.0300	1.1250	1.5000	3.0000	976-000-257
0.2500	0.2500	0.0150	1.5000	2.1250	4.0000	976-000-258
0.2500	0.2500	0.0300	1.5000	2.1250	4.0000	976-000-259
0.3125	0.3125	0.0300	1.6250	2.0000	4.0000	976-000-260
0.3125	0.3125	0.0600	1.6250	2.0000	4.0000	976-000-262
0.3750	0.3750	0.0300	2.0000	1.6250	4.0000	976-000-263
0.3750	0.3750	0.0600	2.0000	1.6250	4.0000	976-000-264
0.4375	0.4375	0.0300	3.0000	2.6250	6.0000	976-000-265
0.4375	0.4375	0.0600	3.0000	2.6250	6.0000	976-000-267
0.5000	0.5000	0.0300	3.0000	2.6250	6.0000	976-000-268
0.5000	0.5000	0.0600	3.0000	2.6250	6.0000	976-000-269
0.6250	0.6250	0.0300	3.0000	2.6250	6.0000	976-000-270
0.6250	0.6250	0.0600	3.0000	2.6250	6.0000	976-000-271
0.7500	0.7500	0.0300	3.0000	2.6250	6.0000	976-000-272
0.7500	0.7500	0.0600	3.0000	2.6250	6.0000	976-000-273
1.0000	1.0000	0.0300	3.0000	2.6250	6.0000	976-000-274
1.0000	1.0000	0.0600	3.0000	2.6250	6.0000	976-000-275



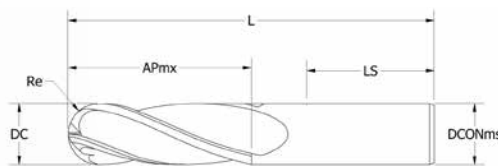
VARIABLE HELIX



4-FLUTE - STUB LENGTH - BALL END



DC	DCONms	Re	APmx	LS	L	PRODUCT #
0.1250	0.1250	0.0625	0.2500	0.8750	1.5000	976-000-488
0.1875	0.1875	0.0938	0.3750	1.2500	2.0000	976-000-489
0.2500	0.2500	0.1250	0.5000	1.1250	2.0000	976-000-490
0.3125	0.3125	0.1563	0.5000	1.1250	2.0000	976-000-491
0.3750	0.3750	0.1875	0.6250	1.0000	2.0000	976-000-492
0.4375	0.4375	0.2188	0.6250	1.5000	2.5000	976-000-493
0.5000	0.5000	0.2500	0.7500	1.3750	2.5000	976-000-494
0.6250	0.6250	0.3125	0.7500	1.8750	3.0000	976-000-495
0.7500	0.7500	0.3750	1.0000	1.6250	3.0000	976-000-496

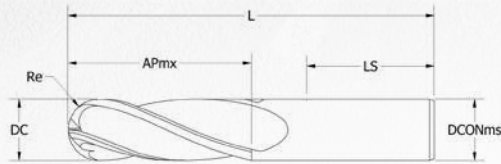


4-FLUTE - STANDARD LENGTH - BALL END



DC	DCONms	Re	APmx	LS	L	PRODUCT #
0.1250	0.1250	0.0625	0.5000	0.6250	1.5000	976-000-497
0.1875	0.1875	0.0938	0.6250	1.0000	2.0000	976-000-498
0.2500	0.2500	0.1250	0.7500	1.3750	2.5000	976-000-499
0.3125	0.3125	0.1563	0.8125	1.3125	2.5000	976-000-500
0.3750	0.3750	0.1875	0.8750	1.2500	2.5000	976-000-501
0.3750	0.3750	0.1875	1.0000	1.1250	2.5000	976-000-502
0.4375	0.4375	0.2188	1.0000	1.3750	2.7500	976-000-503
0.5000	0.5000	0.2500	1.0000	1.6250	3.0000	976-000-504
0.5000	0.5000	0.2500	1.2500	1.3750	3.0000	976-000-505
0.6250	0.6250	0.3125	1.5000	1.6250	3.5000	976-000-506
0.7500	0.7500	0.3750	1.7500	1.8750	4.0000	976-000-507
1.0000	1.0000	0.5000	1.7500	1.8750	4.0000	976-000-508

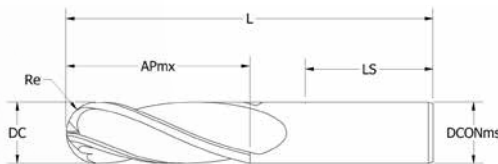
VARIABLE HELIX



4-FLUTE - LONG LENGTH - BALL END



DC	DCONms	Re	APmx	LS	L	PRODUCT #
0.1250	0.1250	0.0625	0.7500	1.3750	2.5000	976-000-509
0.1875	0.1875	0.0938	0.7500	1.3750	2.5000	976-000-510
0.2500	0.2500	0.1250	1.1250	1.5000	3.0000	976-000-511
0.3125	0.3125	0.1563	1.1250	1.5000	3.0000	976-000-512
0.3750	0.3750	0.1875	1.2500	1.3750	3.0000	976-000-513
0.4375	0.4375	0.2188	2.0000	1.6250	4.0000	976-000-514
0.5000	0.5000	0.2500	2.0000	1.6250	4.0000	976-000-515
0.6250	0.6250	0.3125	2.2500	2.3750	5.0000	976-000-516
0.7500	0.7500	0.3750	2.2500	2.3750	5.0000	976-000-517
1.0000	1.0000	0.5000	2.2500	2.3750	5.0000	976-000-518



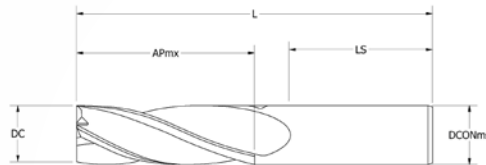
4-FLUTE - X LONG LENGTH - BALL END



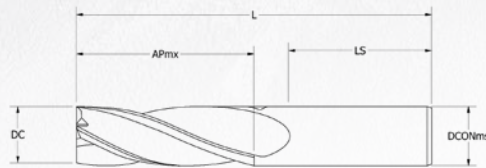
DC	DCONms	Re	APmx	LS	L	PRODUCT #
0.1250	0.1250	0.0625	1.0000	1.6250	3.0000	976-000-519
0.1875	0.1875	0.0938	1.1250	1.5000	3.0000	976-000-520
0.2500	0.2500	0.1250	1.5000	2.1250	4.0000	976-000-521
0.3125	0.3125	0.1563	1.6250	2.0000	4.0000	976-000-522
0.3750	0.3750	0.1875	1.7500	1.8750	4.0000	976-000-523
0.4375	0.4375	0.2188	3.0000	2.6250	6.0000	976-000-524
0.5000	0.5000	0.2500	3.0000	2.6250	6.0000	976-000-525
0.6250	0.6250	0.3125	3.0000	2.6250	6.0000	976-000-526
0.7500	0.7500	0.3750	3.0000	2.6250	6.0000	976-000-527
1.0000	1.0000	0.5000	3.0000	2.6250	6.0000	976-000-528


5-FLUTE - STUB LENGTH - SQUARE END


DC	DCONms	APmx	LS	L	PRODUCT #
0.1250	0.1250	0.2500	0.8750	1.5000	976-000-049
0.1875	0.1875	0.3750	1.2500	2.0000	976-000-050
0.2500	0.2500	0.5000	1.1250	2.0000	976-000-051
0.3125	0.3125	0.5000	1.1250	2.0000	976-000-052
0.3750	0.3750	0.6250	1.0000	2.0000	976-000-053
0.4375	0.4375	0.6250	1.5000	2.5000	976-000-054
0.5000	0.5000	0.7500	1.3750	2.5000	976-000-055
0.6250	0.6250	0.7500	1.8750	3.0000	976-000-056
0.7500	0.7500	1.0000	1.6250	3.0000	976-000-057


5-FLUTE - STANDARD LENGTH - SQUARE END

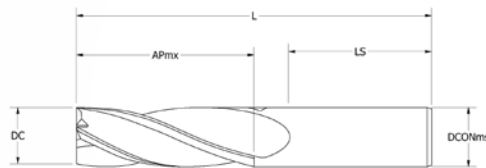

DC	DCONms	APmx	LS	L	PRODUCT #
0.1250	0.1250	0.5000	0.6250	1.5000	976-000-058
0.1875	0.1875	0.6250	1.0000	2.0000	976-000-059
0.2500	0.2500	0.7500	1.3750	2.5000	976-000-060
0.2500	0.2500	1.0000	1.1250	2.5000	976-000-061
0.2500	0.2500	1.2500	0.8750	2.5000	976-000-062
0.3125	0.3125	0.8125	1.3125	2.5000	976-000-063
0.3750	0.3750	0.8750	1.2500	2.5000	976-000-064
0.3750	0.3750	1.0000	1.1250	2.5000	976-000-065
0.3750	0.3750	1.2500	0.8750	2.5000	976-000-066
0.4375	0.4375	1.0000	1.3750	2.7500	976-000-067
0.5000	0.5000	1.0000	1.6250	3.0000	976-000-068
0.5000	0.5000	1.2500	1.3750	3.0000	976-000-069
0.5000	0.5000	1.5000	1.1250	3.0000	976-000-070
0.5000	0.5000	1.5000	1.6250	3.5000	976-000-071
0.5000	0.5000	1.7500	1.3750	3.5000	976-000-072
0.6250	0.6250	1.5000	1.6250	3.5000	976-000-073
0.6250	0.6250	1.7500	1.3750	3.5000	976-000-074
0.7500	0.7500	1.7500	1.8750	4.0000	976-000-075
1.0000	1.0000	1.7500	1.8750	4.0000	976-000-076



5-FLUTE - LONG LENGTH - SQUARE END



DC	DCONms	APmx	LS	L	PRODUCT #
0.1250	0.1250	0.7500	1.3750	2.5000	976-000-077
0.1875	0.1875	0.7500	1.3750	2.5000	976-000-078
0.2500	0.2500	1.1250	1.5000	3.0000	976-000-079
0.3125	0.3125	1.1250	1.5000	3.0000	976-000-080
0.3750	0.3750	1.2500	1.3750	3.0000	976-000-081
0.4375	0.4375	2.0000	1.6250	4.0000	976-000-082
0.5000	0.5000	2.0000	1.6250	4.0000	976-000-083
0.6250	0.6250	2.2500	2.3750	5.0000	976-000-084
0.7500	0.7500	2.2500	2.3750	5.0000	976-000-085
1.0000	1.0000	2.2500	2.3750	5.0000	976-000-086



5-FLUTE - X LONG LENGTH - SQUARE END



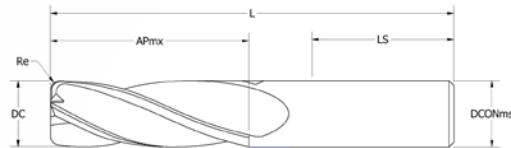
DC	DCONms	APmx	LS	L	PRODUCT #
0.1250	0.1250	1.0000	1.6250	3.0000	976-000-087
0.1875	0.1875	1.1250	1.5000	3.0000	976-000-088
0.2500	0.2500	1.5000	2.1250	4.0000	976-000-089
0.3125	0.3125	1.6250	2.0000	4.0000	976-000-090
0.3750	0.3750	2.0000	1.6250	4.0000	976-000-091
0.4375	0.4375	3.0000	2.6250	6.0000	976-000-092
0.5000	0.5000	3.0000	2.6250	6.0000	976-000-093
0.6250	0.6250	3.0000	2.6250	6.0000	976-000-094
0.7500	0.7500	3.0000	2.6250	6.0000	976-000-095
1.0000	1.0000	3.0000	2.6250	6.0000	976-000-096



5-FLUTE - STUB LENGTH - CORNER RADIUS



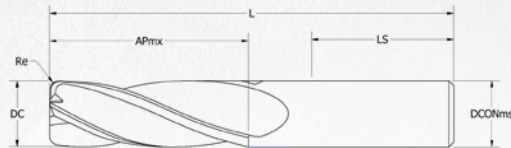
DC	DCONms	Re	APmx	LS	L	PRODUCT #
0.1250	0.1250	0.0100	0.2500	0.8750	1.5000	976-000-276
0.1875	0.1875	0.0100	0.3750	1.2500	2.0000	976-000-277
0.2500	0.2500	0.0200	0.5000	1.1250	2.0000	976-000-278
0.3125	0.3125	0.0200	0.5000	1.1250	2.0000	976-000-279
0.3750	0.3750	0.0200	0.6250	1.0000	2.0000	976-000-280
0.4375	0.4375	0.0300	0.6250	1.5000	2.5000	976-000-281
0.5000	0.5000	0.0300	0.7500	1.3750	2.5000	976-000-282
0.6250	0.6250	0.0400	0.7500	1.8750	3.0000	976-000-283
0.7500	0.7500	0.0400	1.0000	1.6250	3.0000	976-000-284



5-FLUTE - STANDARD LENGTH - CORNER RADIUS



DC	DCONms	Re	APmx	LS	L	PRODUCT #
0.1250	0.1250	0.0100	0.5000	0.6250	1.5000	976-000-285
0.1250	0.1250	0.0150	0.5000	0.6250	1.5000	976-000-286
0.1250	0.1250	0.0200	0.5000	0.6250	1.5000	976-000-287
0.1875	0.1875	0.0100	0.6250	1.0000	2.0000	976-000-288
0.1875	0.1875	0.0150	0.6250	1.0000	2.0000	976-000-289
0.1875	0.1875	0.0200	0.6250	1.0000	2.0000	976-000-290
0.1875	0.1875	0.0300	0.6250	1.0000	2.0000	976-000-291
0.2500	0.2500	0.0100	0.7500	1.3750	2.5000	976-000-292
0.2500	0.2500	0.0150	0.7500	1.3750	2.5000	976-000-293
0.2500	0.2500	0.0200	0.7500	1.3750	2.5000	976-000-294
0.2500	0.2500	0.0300	0.7500	1.3750	2.5000	976-000-295
0.2500	0.2500	0.0600	0.7500	1.3750	2.5000	976-000-296
0.2500	0.2500	0.0100	1.0000	1.1250	2.5000	976-000-297
0.2500	0.2500	0.0150	1.0000	1.1250	2.5000	976-000-298
0.2500	0.2500	0.0200	1.0000	1.1250	2.5000	976-000-299
0.2500	0.2500	0.0300	1.0000	1.1250	2.5000	976-000-300
0.2500	0.2500	0.0600	1.0000	1.1250	2.5000	976-000-301
0.2500	0.2500	0.0100	1.2500	0.8750	2.5000	976-000-302
0.2500	0.2500	0.0150	1.2500	0.8750	2.5000	976-000-303
0.2500	0.2500	0.0200	1.2500	0.8750	2.5000	976-000-304
0.2500	0.2500	0.0300	1.2500	0.8750	2.5000	976-000-305
0.2500	0.2500	0.0600	1.2500	0.8750	2.5000	976-000-306



5-FLUTE - STANDARD LENGTH - CORNER RADIUS



DC	DCONms	Re	APmx	LS	L	PRODUCT #
0.3125	0.3125	0.0100	0.8125	1.3125	2.5000	976-000-307
0.3125	0.3125	0.0150	0.8125	1.3125	2.5000	976-000-308
0.3125	0.3125	0.0200	0.8125	1.3125	2.5000	976-000-309
0.3125	0.3125	0.0300	0.8125	1.3125	2.5000	976-000-310
0.3125	0.3125	0.0600	0.8125	1.3125	2.5000	976-000-311
0.3750	0.3750	0.0100	0.8750	1.2500	2.5000	976-000-312
0.3750	0.3750	0.0150	0.8750	1.2500	2.5000	976-000-313
0.3750	0.3750	0.0200	0.8750	1.2500	2.5000	976-000-314
0.3750	0.3750	0.0300	0.8750	1.2500	2.5000	976-000-315
0.3750	0.3750	0.0600	0.8750	1.2500	2.5000	976-000-316
0.3750	0.3750	0.0100	1.0000	1.1250	2.5000	976-000-317
0.3750	0.3750	0.0150	1.0000	1.1250	2.5000	976-000-318
0.3750	0.3750	0.0200	1.0000	1.1250	2.5000	976-000-319
0.3750	0.3750	0.0300	1.0000	1.1250	2.5000	976-000-320
0.3750	0.3750	0.0600	1.0000	1.1250	2.5000	976-000-321
0.3750	0.3750	0.0100	1.2500	0.8750	2.5000	976-000-322
0.3750	0.3750	0.0150	1.2500	0.8750	2.5000	976-000-323
0.3750	0.3750	0.0200	1.2500	0.8750	2.5000	976-000-324
0.3750	0.3750	0.0300	1.2500	0.8750	2.5000	976-000-325
0.3750	0.3750	0.0600	1.2500	0.8750	2.5000	976-000-326
0.4375	0.4375	0.0150	1.0000	1.3750	2.7500	976-000-327
0.4375	0.4375	0.0200	1.0000	1.3750	2.7500	976-000-328
0.4375	0.4375	0.0300	1.0000	1.3750	2.7500	976-000-329
0.4375	0.4375	0.0600	1.0000	1.3750	2.7500	976-000-330
0.5000	0.5000	0.0100	1.0000	1.6250	3.0000	976-000-331
0.5000	0.5000	0.0150	1.0000	1.6250	3.0000	976-000-332
0.5000	0.5000	0.0300	1.0000	1.6250	3.0000	976-000-333
0.5000	0.5000	0.0600	1.0000	1.6250	3.0000	976-000-334
0.5000	0.5000	0.0900	1.0000	1.6250	3.0000	976-000-335
0.5000	0.5000	0.1200	1.0000	1.6250	3.0000	976-000-336
0.5000	0.5000	0.0100	1.2500	1.3750	3.0000	976-000-337
0.5000	0.5000	0.0150	1.2500	1.3750	3.0000	976-000-338
0.5000	0.5000	0.0300	1.2500	1.3750	3.0000	976-000-339
0.5000	0.5000	0.0600	1.2500	1.3750	3.0000	976-000-340
0.5000	0.5000	0.0900	1.2500	1.3750	3.0000	976-000-341
0.5000	0.5000	0.1200	1.2500	1.3750	3.0000	976-000-342
0.5000	0.5000	0.0100	1.5000	1.1250	3.0000	976-000-343
0.5000	0.5000	0.0150	1.5000	1.1250	3.0000	976-000-344
0.5000	0.5000	0.0300	1.5000	1.1250	3.0000	976-000-345
0.5000	0.5000	0.0600	1.5000	1.1250	3.0000	976-000-346
0.5000	0.5000	0.0900	1.5000	1.1250	3.0000	976-000-347
0.5000	0.5000	0.1200	1.5000	1.1250	3.0000	976-000-348



5-FLUTE - STANDARD LENGTH - CORNER RADIUS



DC	DCONms	Re	APmx	LS	L	PRODUCT #
0.5000	0.5000	0.0100	1.5000	1.6250	3.5000	976-000-349
0.5000	0.5000	0.0150	1.5000	1.6250	3.5000	976-000-350
0.5000	0.5000	0.0300	1.5000	1.6250	3.5000	976-000-351
0.5000	0.5000	0.0600	1.5000	1.6250	3.5000	976-000-352
0.5000	0.5000	0.0900	1.5000	1.6250	3.5000	976-000-353
0.5000	0.5000	0.1200	1.5000	1.6250	3.5000	976-000-354
0.5000	0.5000	0.0100	1.7500	1.3750	3.5000	976-000-355
0.5000	0.5000	0.0150	1.7500	1.3750	3.5000	976-000-356
0.5000	0.5000	0.0300	1.7500	1.3750	3.5000	976-000-357
0.5000	0.5000	0.0600	1.7500	1.3750	3.5000	976-000-358
0.5000	0.5000	0.0900	1.7500	1.3750	3.5000	976-000-359
0.5000	0.5000	0.1200	1.7500	1.3750	3.5000	976-000-360
0.6250	0.6250	0.0300	1.5000	1.6250	3.5000	976-000-361
0.6250	0.6250	0.0400	1.5000	1.6250	3.5000	976-000-362
0.6250	0.6250	0.0600	1.5000	1.6250	3.5000	976-000-363
0.6250	0.6250	0.0900	1.5000	1.6250	3.5000	976-000-364
0.6250	0.6250	0.1200	1.5000	1.6250	3.5000	976-000-365
0.6250	0.6250	0.0300	1.7500	1.8750	4.0000	976-000-366
0.6250	0.6250	0.0400	1.7500	1.8750	4.0000	976-000-367
0.6250	0.6250	0.0600	1.7500	1.8750	4.0000	976-000-368
0.6250	0.6250	0.0900	1.7500	1.8750	4.0000	976-000-369
0.6250	0.6250	0.1200	1.7500	1.8750	4.0000	976-000-370
0.7500	0.7500	0.0300	1.7500	1.8750	4.0000	976-000-371
0.7500	0.7500	0.0400	1.7500	1.8750	4.0000	976-000-372
0.7500	0.7500	0.0600	1.7500	1.8750	4.0000	976-000-373
0.7500	0.7500	0.0900	1.7500	1.8750	4.0000	976-000-374
0.7500	0.7500	0.1200	1.7500	1.8750	4.0000	976-000-375
1.0000	1.0000	0.0300	1.7500	1.8750	4.0000	976-000-376
1.0000	1.0000	0.0400	1.7500	1.8750	4.0000	976-000-377
1.0000	1.0000	0.0600	1.7500	1.8750	4.0000	976-000-378
1.0000	1.0000	0.0900	1.7500	1.8750	4.0000	976-000-379
1.0000	1.0000	0.1200	1.7500	1.8750	4.0000	976-000-380



5-FLUTE - LONG LENGTH - CORNER RADIUS



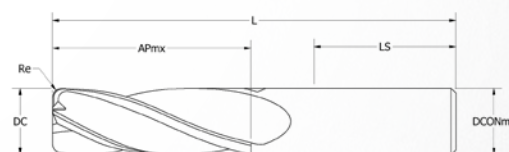
DC	DCONms	Re	APmx	LS	L	PRODUCT #
0.1250	0.1250	0.0150	0.7500	1.3750	2.5000	976-000-381
0.1250	0.1250	0.0300	0.7500	1.3750	2.5000	976-000-382
0.1875	0.1875	0.0150	0.7500	1.3750	2.5000	976-000-383
0.1875	0.1875	0.0300	0.7500	1.3750	2.5000	976-000-384
0.2500	0.2500	0.0150	1.1250	1.5000	3.0000	976-000-385
0.2500	0.2500	0.0300	1.1250	1.5000	3.0000	976-000-386
0.3125	0.3125	0.0150	1.1250	1.5000	3.0000	976-000-387
0.3125	0.3125	0.0300	1.1250	1.5000	3.0000	976-000-388
0.3750	0.3750	0.0300	1.2500	1.3750	3.0000	976-000-389
0.3750	0.3750	0.0600	1.2500	1.3750	3.0000	976-000-390
0.4375	0.4375	0.0300	2.0000	1.6250	4.0000	976-000-391
0.4375	0.4375	0.0600	2.0000	1.6250	4.0000	976-000-392
0.5000	0.5000	0.0300	2.0000	1.6250	4.0000	976-000-393
0.5000	0.5000	0.0600	2.0000	1.6250	4.0000	976-000-394
0.6250	0.6250	0.0300	2.2500	2.3750	5.0000	976-000-395
0.6250	0.6250	0.0600	2.2500	2.3750	5.0000	976-000-396
0.7500	0.7500	0.0300	2.2500	2.3750	5.0000	976-000-397
0.7500	0.7500	0.0600	2.2500	2.3750	5.0000	976-000-398
1.0000	1.0000	0.0300	2.2500	2.3750	5.0000	976-000-399
1.0000	1.0000	0.0600	2.2500	2.3750	5.0000	976-000-400

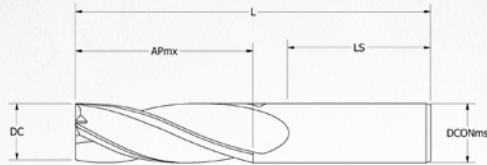


5-FLUTE - X - LONG LENGTH - CORNER RADIUS



DC	DCONms	Re	APmx	LS	L	PRODUCT #
0.1250	0.1250	0.0150	1.0000	1.3750	3.0000	976-000-401
0.1250	0.1250	0.0300	1.0000	1.3750	3.0000	976-000-403
0.1875	0.1875	0.0150	1.1250	1.3750	3.0000	976-000-404
0.1875	0.1875	0.0300	1.1250	1.3750	3.0000	976-000-405
0.2500	0.2500	0.0150	1.5000	1.5000	4.0000	976-000-406
0.2500	0.2500	0.0300	1.5000	1.5000	4.0000	976-000-407
0.3125	0.3125	0.0300	1.6250	1.5000	4.0000	976-000-408
0.3125	0.3125	0.0600	1.6250	1.5000	4.0000	976-000-410
0.3750	0.3750	0.0300	2.0000	1.3750	6.0000	976-000-411
0.3750	0.3750	0.0600	2.0000	1.3750	6.0000	976-000-412
0.4375	0.4375	0.0300	3.0000	1.6250	6.0000	976-000-413
0.4375	0.4375	0.0600	3.0000	1.6250	6.0000	976-000-415
0.5000	0.5000	0.0300	3.0000	1.6250	6.0000	976-000-416
0.5000	0.5000	0.0600	3.0000	1.6250	6.0000	976-000-417
0.6250	0.6250	0.0300	3.0000	2.3750	6.0000	976-000-418
0.6250	0.6250	0.0600	3.0000	2.3750	6.0000	976-000-419
0.7500	0.7500	0.0300	3.0000	2.3750	6.0000	976-000-420
0.7500	0.7500	0.0600	3.0000	2.3750	6.0000	976-000-421
1.0000	1.0000	0.0300	3.0000	2.3750	6.0000	976-000-422
1.0000	1.0000	0.0600	3.0000	2.3750	6.0000	976-000-423

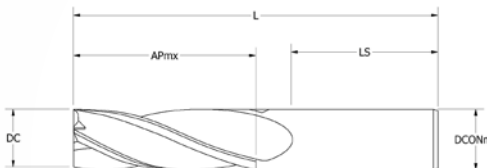




7-FLUTE - STUB LENGTH - SQUARE END



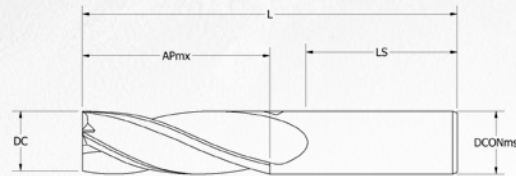
DC	DCONms	APmx	LS	L	PRODUCT #
0.1875	0.1875	0.3750	2.1250	2.0000	976-000-097
0.2500	0.2500	0.5000	1.1250	2.0000	976-000-098
0.3125	0.3125	0.5000	1.1250	2.0000	976-000-099
0.3750	0.3750	0.6250	1.0000	2.0000	976-000-100
0.4375	0.4375	0.6250	1.5000	2.5000	976-000-101
0.5000	0.5000	0.7500	1.3750	2.5000	976-000-102
0.6250	0.6250	0.7500	1.8750	3.0000	976-000-103
0.7500	0.7500	1.0000	1.6250	3.0000	976-000-104



7-FLUTE - STANDARD LENGTH - SQUARE END



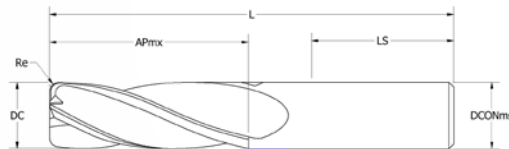
DC	DCONms	APmx	LS	L	PRODUCT #
0.1875	0.1875	0.6250	1.0000	2.0000	976-000-105
0.2500	0.2500	0.7500	1.3750	2.5000	976-000-106
0.2500	0.2500	1.0000	1.1250	2.5000	976-000-107
0.3125	0.3125	0.8125	1.3125	2.5000	976-000-108
0.3750	0.3750	0.8750	1.2500	2.5000	976-000-109
0.3750	0.3750	1.0000	1.1250	2.5000	976-000-110
0.4375	0.4375	1.0000	1.3750	2.7500	976-000-111
0.5000	0.5000	1.0000	1.6250	3.0000	976-000-112
0.5000	0.5000	1.2500	1.3750	3.0000	976-000-113
0.5000	0.5000	1.5000	1.6250	3.5000	976-000-114
0.5000	0.5000	1.7500	1.3750	3.5000	976-000-115
0.6250	0.6250	1.5000	1.6250	3.5000	976-000-116
0.7500	0.7500	1.7500	1.8750	4.0000	976-000-117
1.0000	1.0000	1.7500	1.8750	4.0000	976-000-118



7-FLUTE - LONG LENGTH - SQUARE END



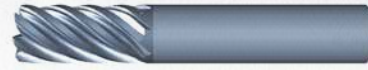
DC	DCONms	APmx	LS	L	PRODUCT #
0.1875	0.1875	0.7500	1.3750	2.5000	976-000-119
0.2500	0.2500	1.1250	1.5000	3.0000	976-000-120
0.3125	0.3125	1.1250	1.5000	3.0000	976-000-121
0.3750	0.3750	1.2500	1.3750	3.0000	976-000-122
0.4375	0.4375	2.0000	1.6250	4.0000	976-000-123
0.5000	0.5000	2.0000	1.6250	4.0000	976-000-124
0.6250	0.6250	2.2500	2.3750	5.0000	976-000-125
0.7500	0.7500	2.2500	2.3750	5.0000	976-000-126
1.0000	1.0000	2.2500	2.3750	5.0000	976-000-127



7-FLUTE - STUB LENGTH - CORNER RADIUS



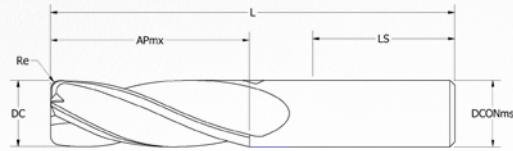
DC	DCONms	Re	APmx	LS	L	PRODUCT #
0.1875	0.1875	0.0100	0.3750	1.2500	2.0000	976-000-424
0.2500	0.2500	0.0200	0.5000	1.1250	2.0000	976-000-425
0.3125	0.3125	0.0200	0.5000	1.1250	2.0000	976-000-426
0.3750	0.3750	0.0200	0.6250	1.0000	2.0000	976-000-427
0.4375	0.4375	0.0300	0.6250	1.5000	2.5000	976-000-428
0.5000	0.5000	0.0300	0.7500	1.3750	2.5000	976-000-429
0.6250	0.6250	0.0400	0.7500	1.8750	3.0000	976-000-430
0.7500	0.7500	0.0400	1.0000	1.6250	3.0000	976-000-431



7-FLUTE - STANDARD LENGTH - CORNER RADIUS



DC	DCONms	APmx	Re	LS	L	PRODUCT #
0.1875	0.1875	0.0150	0.6250	1.0000	2.0000	976-000-432
0.1875	0.1875	0.0300	0.6250	1.0000	2.0000	976-000-433
0.2500	0.2500	0.0150	0.7500	1.3750	2.5000	976-000-434
0.2500	0.2500	0.0300	0.7500	1.3750	2.5000	976-000-435
0.2500	0.2500	0.0150	1.0000	1.1250	2.5000	976-000-436
0.2500	0.2500	0.0300	1.0000	1.1250	2.5000	976-000-437
0.3125	0.3125	0.0150	0.8125	1.3125	2.5000	976-000-438
0.3125	0.3125	0.0300	0.8125	1.3125	2.5000	976-000-439
0.3750	0.3750	0.0150	0.8750	1.2500	2.5000	976-000-440
0.3750	0.3750	0.0300	0.8750	1.2500	2.5000	976-000-441
0.3750	0.3750	0.0600	0.8750	1.2500	2.5000	976-000-442
0.3750	0.3750	0.0150	1.0000	1.1250	2.5000	976-000-443
0.3750	0.3750	0.0300	1.0000	1.1250	2.5000	976-000-444
0.3750	0.3750	0.0600	1.0000	1.1250	2.5000	976-000-445
0.4375	0.4375	0.0150	1.0000	1.3750	2.7500	976-000-446
0.4375	0.4375	0.0300	1.0000	1.3750	2.7500	976-000-447
0.4375	0.4375	0.0600	1.0000	1.3750	2.7500	976-000-448
0.5000	0.5000	0.0150	1.0000	1.6250	3.0000	976-000-449
0.5000	0.5000	0.0300	1.0000	1.6250	3.0000	976-000-450
0.5000	0.5000	0.0600	1.0000	1.6250	3.0000	976-000-451
0.5000	0.5000	0.0150	1.2500	1.3750	3.0000	976-000-452
0.5000	0.5000	0.0300	1.2500	1.3750	3.0000	976-000-453
0.5000	0.5000	0.0600	1.2500	1.3750	3.0000	976-000-454
0.5000	0.5000	0.0150	1.5000	1.1250	3.0000	976-000-455
0.5000	0.5000	0.0300	1.5000	1.1250	3.0000	976-000-456
0.5000	0.5000	0.0600	1.5000	1.1250	3.0000	976-000-457
0.5000	0.5000	0.0150	1.7500	1.3750	3.5000	976-000-458
0.5000	0.5000	0.0300	1.7500	1.3750	3.5000	976-000-459
0.5000	0.5000	0.0600	1.7500	1.3750	3.5000	976-000-460
0.6250	0.6250	0.0300	1.5000	1.6250	3.5000	976-000-461
0.6250	0.6250	0.0600	1.5000	1.6250	3.5000	976-000-462
0.6250	0.6250	0.0900	1.5000	1.6250	3.5000	976-000-463
0.7500	0.7500	0.0300	1.7500	1.8750	4.0000	976-000-464
0.7500	0.7500	0.0600	1.7500	1.8750	4.0000	976-000-465
0.7500	0.7500	0.0900	1.7500	1.8750	4.0000	976-000-466
1.0000	1.0000	0.0300	1.7500	1.8750	4.0000	976-000-467
1.0000	1.0000	0.0600	1.7500	1.8750	4.0000	976-000-468
1.0000	1.0000	0.0900	1.7500	1.8750	4.0000	976-000-469

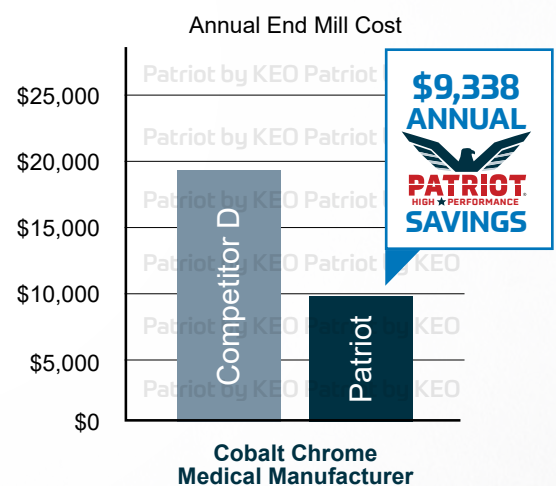
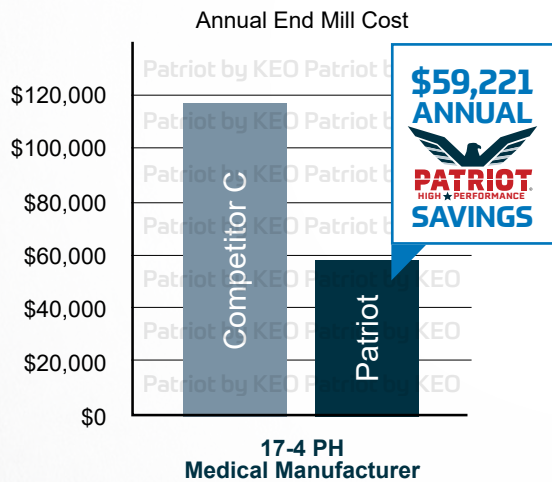
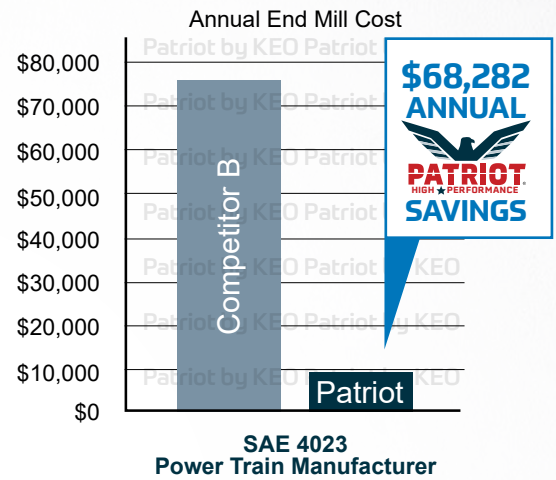
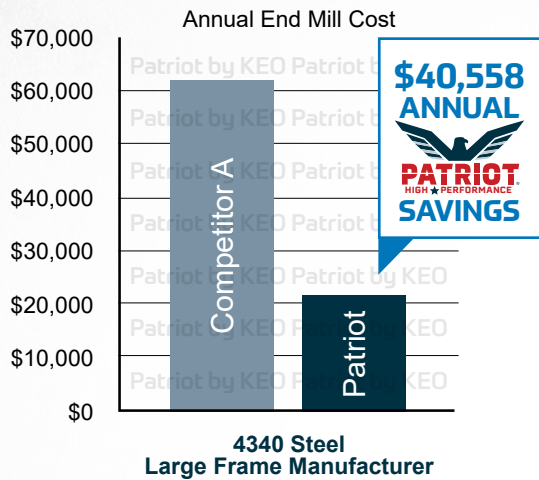


7-FLUTE - LONG LENGTH - CORNER RADIUS



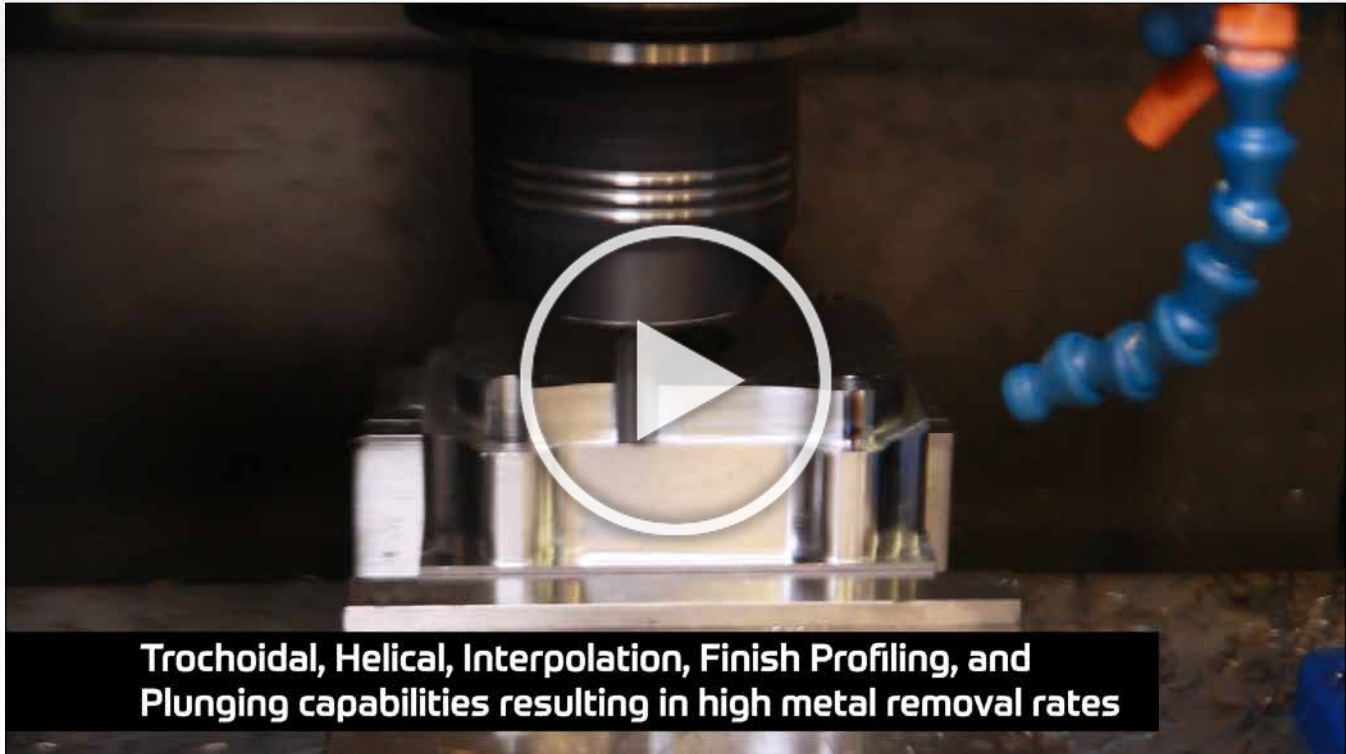
DC	DCONms	Re	APmx	LS	L	PRODUCT #
0.1875	0.1875	0.0150	0.7500	1.3750	2.5000	976-000-470
0.1875	0.1875	0.0300	0.7500	1.3750	2.5000	976-000-471
0.2500	0.2500	0.0150	1.1250	1.5000	3.0000	976-000-472
0.2500	0.2500	0.0300	1.1250	1.5000	3.0000	976-000-473
0.3125	0.3125	0.0150	1.1250	1.5000	3.0000	976-000-474
0.3125	0.3125	0.0300	1.1250	1.5000	3.0000	976-000-475
0.3750	0.3750	0.0300	1.2500	1.3750	3.0000	976-000-476
0.3750	0.3750	0.0600	1.2500	1.3750	3.0000	976-000-477
0.4375	0.4375	0.0300	2.0000	1.6250	4.0000	976-000-478
0.4375	0.4375	0.0600	2.0000	1.6250	4.0000	976-000-479
0.5000	0.5000	0.0300	2.0000	1.6250	4.0000	976-000-480
0.5000	0.5000	0.0600	2.0000	1.6250	4.0000	976-000-481
0.6250	0.6250	0.0300	2.2500	2.3750	5.0000	976-000-482
0.6250	0.6250	0.0600	2.2500	2.3750	5.0000	976-000-483
0.7500	0.7500	0.0300	2.2500	2.3750	5.0000	976-000-484
0.7500	0.7500	0.0600	2.2500	2.3750	5.0000	976-000-485
1.0000	1.0000	0.0300	2.2500	2.3750	5.0000	976-000-486
1.0000	1.0000	0.0600	2.2500	2.3750	5.0000	976-000-487

CASE STUDIES



Proprietary to ARCH Cutting Tools

HIGH PERFORMANCE END MILLS PUSH DOLLARS TO THE BOTTOM LINE



Watch our case study on the Patriot High Performance® End Mill where we go in-depth with Quality Machine & Repair Inc. to learn more about the company's success with the tool. It's a great use case story with tips from our customer on application. While they ordered 16 endmills for the job, they only needed two.

Scan Here to Watch on our YouTube Page!



PATRIOT HIGH PERFORMANCE END MILL SPEEDS & FEEDS



				END MILL DIAMETER									
ISO	MATERIAL	HARDNESS	Vc (SFM)*	1/8"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	1"
				Fz (INCH PER TOOTH)*									
P	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 275 BHN or ≤ 28 HRC	320-750	.0009 - .0017	.0011 - .0019	.0020 - .0028	.0024 - .0033	.0025 - .0038	.0025 - .0041	.0027- .0046	.0035 - .0052	.0040 - .0066	.0042 - .0090
	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 17-4 PH	≤ 375 BHN or ≤ 40 HRC	230-670	.0006 - .0013	.0011 - .0017	.0014 - .0022	.0017 - .0024	.0019 - .0028	.0020 - .0035	.0023 - .0040	.0030 - .0050	.0038 - .0057	.0040 - .0085
M	STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F, 440F	≤ 275 BHN or ≤ 28 HRC	250-600	.0004 - .0013	.0008 - .0017	.0013 - .0020	.0016 - .0023	.0020 - .0026	.0022 - .0030	.0026 -.0034	.0032 - .0039	.0035 - .0047	.0035 - .0068
	STAINLESS STEELS (DIFFICULT) 304, 304L, 316, 316L	≤ 275 BHN or ≤ 28 HRC	180-520	.0005 - .0017	.0010 - .0020	.0013 - .0023	.0017 - .0027	.0021 - .0030	.0025 - .0035	.0028 - .0040	.0030 - .0048	.0033 - .0060	.0033 - .0078
K	GRAY IRONS Class 20, 30, 40, 50, 60, G3000, G3500	≤ 220 BHN or ≤ 19 HRC	320-830	.0007 - .0020	.0011 - .0032	.0014 - .0041	.0019 - .0052	.0022 - .0061	.0025 - .0070	.0028 - .0080	.0031 - .0086	.0032 - .0095	.0036 - .0110
	DUCTILE IRONS D&M series, 250, 300, 350, 400, 60-40-18, 65-45-12	≤ 260 BHN or ≤ 26 HRC	220-670	.0005 - .0014	.0009 - .0023	.0012 - .0032	.0016 - .0038	.0018 - .0041	.0020 - .0047	.0022 - .0053	.0024 - .0062	.0028 - .0070	.0030 - .0090
H	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 555 BHN or ≤ 55 HRC	115-270	.0004 - .0017	.0008 - .0017	.0013 - .0020	.0016 - .0024	.0020 - .0030	.0022 - .0035	.0028 - .0045	.0032 - .0053	.0036 - .0062	.0040 - .0078
S	HR SUPER ALLOYS Inconel 718, Waspaloy, Hastelloy, Inconel 625, Stellite 31, Haynes 25, Rene 41	≤ 275 BHN or ≤ 28 HRC	70-180	.0005 -.0018	.0008 - .0022	.0010 - .0028	.0012 - .0032	.0015 - .0036	.0017 - .0042	.0018 - .0047	.0019 - .0050	.0022 - .0055	.0025 - .0065
	TITANIUM 6AL-4V, ASTM 1, 2, 3, 6AL-2S	≤ 275 BHN or ≤ 28 HRC	140-400	.0007 - .0013	.0011 - .0016	.0013 - .0018	.0015 - .0021	.0019 - .0026	.0022 - .0031	.0024 - .0035	.0025 - .0044	.0030 - .0053	.0031 - .0075
*LOWER Vc AND Fz APPLY TO HEAVY/ROUGHING ENGAGEMENT					*HIGHER Vc AND Fz APPLY TO LIGHT/PROFILING ENGAGEMENT								

*Speeds & feeds are starting recommendations only. Factors such as machine type, fixture, tooling rigidity, available horsepower, coolant delivery method and others will affect the performance significantly.

h_{ex}	(Ae) Radial Depth of cut to % of (Dc) Cutter Diameter	Increase Feed Multiplier
	≥ 40%	1.00
	30%	1.10
	25%	1.18
	20%	1.20
	15%	1.40
	10%	1.75
	7%	2.00
	5%	2.30
	1%	5.00

NOTES



Customer Service

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V. 3.1.2